



Vectra 3D™
contains 3 active
ingredients:
Dinotefuran,
Pyriproxifen &
Permethrin

*"The rapid speed
of kill and repellency properties of
permethrin make it an excellent
ectoparasiticide."*

Key Findings

- ✓ Year round treatment is the most effective method of eliminating ectoparasites from dogs and preventing reinfestations.
- ✓ Products that can be administered directly to dogs are safe and the most effective in controlling ectoparasites.
- ✓ Vectra 3D™ contains Permethrin - A key ingredient responsible for repelling and killing ticks.

Permethrin- A Superior Acaricide

*Byron Blagburn, MS, PhD Distinguished University Professor,
Auburn University College of Veterinary Medicine*

Cathy Ann Ball, MS, VMD Summit VetPharm, LLC

INTRODUCTION

Controlling fleas and ticks on dogs is necessary in preventing primary diseases (FAD, irritation from bites) caused by these agents and also as an aid in the prevention of diseases that they transmit. This is one of the more important therapeutic challenges facing veterinarians today. The veterinarian is the key link in the control of these and other blood-feeding ectoparasites. An integrated method of controlling ectoparasites¹ together with the Companion Animal Parasite Council's (CAPC) recommendations of year round, lifelong prevention² are important tools in building successful ectoparasite control programs.

In the past, flea and tick control programs consisted of treating both the animal and its environment, either together or separately. Many products used to treat animals targeted adult fleas and ticks only. Environmental treatments targeted buildings and selected outdoor environments and consisted of total release fumigation formulations or targeted use of botanical, pyrethroids, carbamates or organophosphorus insecticides. Some of these agents (particularly carbamates and organophosphates) are potentially toxic to humans and animals. These early programs failed to eliminate many of the immature flea and tick stages that represent the greater proportion of the lifecycle.



Newer insecticidal agents are targeted to mammalian safety and more effective against adult fleas and ticks. Some of the newer agents also exhibit excellent activity against both flea eggs and larvae. An emerging strategy for flea and tick control is the use of combinations of adulticides/repellents and ovicides/larvicides on pets to effectively disrupt the lifecycle by eliminating fleas and ticks at every developmental stage. This strategy is intended to interrupt feeding of adult fleas and prevent the development of eggs laid by any surviving adult fleas. Agents with repellent activity against ticks also prevent feeding by adult and immature (larval and nymph stage) ticks; ticks that do not take a blood meal will not reproduce. These newer compounds are safe and can be applied directly to dogs.

PERMETHRIN

Synthetic pyrethroids are a class of compounds whose chemical structure and properties are based on the natural pyrethrin molecule. Permethrin, a second generation pyrethroid, kills target ectoparasites rapidly and also possesses excellent repellent properties. The repellent property of permethrin may reflect the rapid action of the permethrin on the nerve membrane. Permethrin interferes with the opening and closing of sodium ion channels in nerve membranes necessary for normal nerve function. Ectoparasites that are exposed to permethrin undergo repetitive nerve discharges, resulting in rapid paralysis. Consequently, permethrin paralyzes the parasites so quickly that they fall from the host and die. Topically applied permethrin binds to the animals' skin and haircoat. It is more stable than the prototype pyrethrins and is degraded very slowly by ultraviolet light. Permethrin administered at the proper dose to dogs is a safe and effective treatment against ectoparasite infestations. Permethrin is one component of Vectra 3D™ that is responsible for its efficacy against ectoparasites, particularly ticks.

Cats are unable to metabolize permethrin in the same way as dogs. This means that they cannot tolerate the high permethrin concentrations used on dogs. If a cat accidentally ingests such a product (usually due to mistaken application of a dog product directly onto a cat), then potentially toxic levels may result. A five year EPA review (1996 to 2001)* of data has shown that permethrin containing products when used in mixed households can be used safely. The incidence of adverse reactions was 0.00055%. In a community trial sponsored by Summit VetPharm involving 24 veterinary clinics/hospitals including 14 households in which dogs were treated with Vectra 3D(™) and the cats that resided in the same household experienced no adverse effects³.

References:

1. Dryden MW. Integrated flea control for the 21st century. The North American Veterinary Conference 2003, Small Animal and Exotics Orlando, Florida, USA, 18-22 January, 2003. 2003; 808-809.
2. <http://www.capcvet.org>
3. SVP Study Number # 07019

* FOI Reference available on request from EPA.

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Summit VetPharm
400 Kelby Street, Fort Lee, NJ 07024
www.summitvetpharm.com

800-999-0297
Fax: 877-777-5138

